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ABSTRACT

This paper presents a rationale for the compatibility of cooperative learning and invitational education. Invitational education focuses on how teachers can invite students to see themselves as able, valuable, and self-directing in an interactive group situation. Specifically, the rationale demonstrates how cooperatively structured disagreement can take place in an inviting manner. One method for structuring cooperative controversy is described and the findings from a limited research project on this method is summarized. A pilot study is reported in which college of education students participated in cooperative disagreement on a controversial topic in education. (JD)

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DISAGREEMENT CAN BE INVITING: A COOPERATIVE LEARNING APPROACH

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The purpose of this paper is threefold. First, we want to present a rationale for the compatibility of cooperative learning and invitational education, specifically showing how cooperatively structured disagreement can take place in an inviting manner. Second, we wish to describe one method for structuring this cooperative controversy and summarize some of the findings from research on this method. Third, we intend to report on a pilot study in which College of Education students participated in cooperative disagreements on a controversial topic in education.

HOW COOPERATIVE LEARNING FITS WITH INVITATIONAL EDUCATION

Invitational Education focuses on how teachers and elements of the educational ecosystem can "invite students to see themselves as able, valuable, and self-directing" (Purkey & Novak, 1984, p. xiii). Cooperative learning methods complement this focus by providing ways for teachers to structure the classroom so as to encourage students to be inviting to each other.

While Purkey and Novak concentrate on how teachers and other nonstudents can be inviting to students, clearly they see the need for students to "cordially summon" one another. For example, on page 80 they call on teachers to develop an atmosphere in which students are encouraged to be inviting to their peers.

Purkey and Novak delineate three parts of feeling invited: feeling valuable, able, and responsible (p. 8). Cooperative learning encourages these feelings because, in contrast to the normal teacher-fronted classroom, students have a more active role in the classroom.

Individual accountability, a key element of most cooperative learning methods, helps foster this student participation. Individual accountability refers to the structuring of the activity so that each group member must participate in order for the group to reach its goal. Thus, all students realize that they are valuable to their team. Working with others can bring

success to learners who had failed on their own. Finding success invites students to feel able. Additionally, cooperative learning has the potential for making students feel responsible because they are now actively working, not just following the teacher's instructions, and their group is depending on them.

While it's easy for students to feel like a nobody in a 30-person teacher-fronted classroom (Purkey & Novak, 1984 p. 10, 15), in positively interdependent groups of five or less everyone will know everyone soon. Positive interdependence, another key to cooperative learning, means that what helps one group member helps all members, just as what takes away from one takes away from all, i.e., the group sinks or swims together. A number of research reviews strongly suggest that cooperative learning increases liking for classmates as well as for the subject, the teacher, and school in general (references). Another important benefit of cooperative learning is improved self-image, again a vital concern of invitational education (pp. 25-33).

Purkey and Novak decry the use of labelling and grouping in schools. Cooperative learning offers an alternative. Most cooperative learning methods advocate the use of groups which are heterogeneous in every way possible, e.g., past achievement, gender, and ethnicity.

There are two fundamental reasons why students must be made an integral part of the inviting which goes on in schools. The most obvious one is that for many students, relations with peers are more important than those with their teachers. Thus, receiving invitations from other students may be as or more important to the success of many students. As Purkey and Novak note, "peer relations have significant influence on self-concept and school achievement (p. 79).

Another reason why students must be a part of the inviting, on a more practical level, is that most classrooms have many students, but only one teacher. Purkey and Novak stress the need for teachers to reach each student with inviting messages (pp 60-61), and they urge teachers to use systematic means to do so. However, even the most efficient teacher is limited to what one person can do. Imagine how many more inviting messages students

could hear if the whole class were being inviting.

Of course, students often are not initially very good at extending invitations to each other. This is where two other key aspects of cooperative learning come into play: learning collaborative skills and processing group interaction. Purkey and Novak devote an entire chapter, chapter 4, to the skills teachers need to be inviting. When using cooperative learning, teachers need to devote class time and focus to helping students understand and use the skills necessary to group functioning.

Processing group interaction means that after each group activity, each group and the class as a whole spend some time discussing the positive aspects of how group members interacted and ways that they can cooperate even better in the future. Teachers play a vital role in this process, monitoring the groups as they work together to ensure that students are understanding the course content and that they are employing appropriate collaborative skills. Evidence of these taking place are groups that are on-task and group members who, for example, verbally reinforce an active member and solicit the ideas of a student who is more quiet.

THE COOPERATIVE CONTROVERSY METHOD

One particular cooperative learning method is cooperative controversy (Johnson & Johnson, 1987). This method includes six steps:

1) The teacher lectures to the class on the topic of the unit.

2) The students are placed in groups of four, and each foursome is divided into pairs. Each pair is given material supporting one of two sides of a controversial issue connected to the unit's topic. Thus, one pair in each foursome has material on one side of the issue, and the other pair has material supporting another side. Using the teacher-prepared material and their own ideas, the pairs prepare to present their assigned positions to the other pair in their foursome.

3) The pairs present their assigned sides of the issue to each other. Each side takes notes during the other's presentation. Then they debate the issue, defending their assigned positions.

4) The pairs then change sides and prepare to present and defend the side of the issue previously presented by the other pair. They are not given the teacher-presented material supporting that side.

5) The foursomes repeat step three with their newly assigned positions.

6) The students are no longer assigned a position. Instead, they use their own opinions and try - although it is not necessary that they actually do - reach a consensus on the issue within their groups.

7) Students may talk a quiz, write an essay, or work on other tasks based on the topic of the controversy.

It is important to remember that this method also incorporates the key elements of cooperative learning mentioned in the previous section: positive interdependence, individual accountability, collaborative skills, face-to-face interaction, and processing group interaction. This injunction is crucial to understanding how students can be inviting to one another while disagreeing.

Purkey and Novak (pp. 81-83) cite research which identifies the ability to assert oneself as one of four key factors related to self-concept. Assertive behavior is seen as indicative of students' feeling of control over their environment. Being assertive enables, "one to act in one's own best interests, to stand up for oneself without undue anxiety, to express one's honest feelings comfortably, and to exercise one's rights without denying the rights of others" (pp. 81-82).

Purkey and Novak go on to state that assertiveness can be

learned and that one way it can be taught is to encourage the expression of differing viewpoints. Hand in hand with teaching students to be assertive, Purkey and Novak urge that students also learn respect for the divergent viewpoints and personal rights of others.

Cooperative controversy, described above is one such teaching/learning activity designed to accomplish this. This method provides students an opportunity to assert themselves, to differ with others in a safe and structured environment. Yet, at the same time, the cooperative aspect of the environment provides a supportive context in several ways. First, the students are not competing against each other. Instead, they are positively interdependent, because each pair is responsible for studying the material the teacher gives them and then presenting it in such a way that their groupmates can understand it. Rather than seeing each other as enemies to be overcome, students are encouraged to see the opposing pairs as collaborators who provide them with an opportunity to test their knowledge and arguments in the light of alternative perspectives.

Second, individual accountability encourages everyone in the foursome to participate by assertively presenting their views, whether they are those which they are assigned or their own. Third, the teaching of collaborative skills and the processing of group interaction help students learn how to disagree with people's ideas while still respecting the people who have those ideas. Thus, "put downs" are discouraged, and students are assisted in learning appropriate means of disagreeing. Rather than retorting "Your idea is really dumb", students learn the advantages of alternative statements such as "That's one of looking at it. Here's another perspective...."

Another insight on how cooperative learning can make controversy inviting comes from the ideas of Morton Deutsch, David Johnson's mentor. Deutsch (1973) distinguishes between competition and conflict. Competition "implies an opposition in the goals of the interdependent parties such that the probability of goal attainment for one decreases as the probability for the other increases" (p.10). Conflict "exists whenever incompatible

activities occur" (p.10).

The key point here is that conflict - and controversy is one type of conflict - can take place in competitive or cooperative settings. Furthermore, how the conflict unfolds depends very much on which setting it occurs in. An example of a conflict occurring in a cooperative setting would be two friends disagreeing over which is the quickest way to walk to the store: they have the cooperative goal of getting to the store the quickest way possible; they just disagree about what that way is. By providing a safe context for conflicts of opinion in the classroom, cooperative controversy can help students learn more about course content and about dealing with others.

The cooperative controversy method has been contrasted with individual learning, debates, and consensus seeking, i.e., students are instructed to avoid disagreement. On achievement measures, this research has found cooperative controversy to be equal to or better than these other methods. Additionally, on measures of affect, including self-esteem, cooperative controversy has produced more favorable results on a fairly consistent basis. Johnson and Johnson (1987) present a review of this research.

Introduction to the Study

The research reported here was conducted for two reasons. First, the two authors are very interested in cooperative learning and wanted to gain experience with the cooperative controversy technique which is part of the cooperative learning model developed by David and Roger Johnson. Second, the researchers sought to test the effectiveness of the technique with College of Education students, as a part of a teacher education program.

Description of Sample

Undergraduate and graduate students (N=34) in the College of Education at a large state university in Hawaii participated in the study. There were randomly assigned to one of two conditions and 4-person groups in such a way as to balance for original

opinion on the issue to be discussed, academic level (undergraduate or graduate), gender, ability as measured by course grade at midterm, and ethnicity (based on self-description, participants were 44% Japanese, 26% Caucasian, 15% Filipino, 6% Part-Hawaiian, 6% Chinese, and 3% other).

Students were all enrolled in one section of an upper division course on multicultural education which met twice a week for 50 minutes. Prior to the research, which was conducted near the end of the 16-week semester, students' experience with cooperative learning was, in the majority of cases, largely limited to previous work in that course, which used cooperative learning and other group techniques as part of about one-third of the classes.

METHOD

Independent Variable

The independent variable consisted of two conditions: 1) cooperative controversy; and 2) debate. The cooperative controversy condition was structured as outlined in Johnson and Johnson (1988). Students working in pairs within 4-person groups used the following procedure:

1) At the end of class, two students in each foursome are given material on one side of the issue of bilingual education (BE) versus ESL for nonEnglish-speaking students and the other pair is given material supporting the other side based on their original opinion, as indicated on the pre-test. They are requested to study it at home.

Procedure for the Cooperative Condition

First Day

2) 5 minutes. Instructions are given on how to debate cooperatively.

The instructions are:

- This is not a contest.

- Explain your position so that the people who are, for now, on the other side can understand it.
- Make your points clearly and concisely.
- Present evidence to support your arguments.
- Try your best to explain the position you are given, whether you agree with it or not.
- Take notes while the other pair are speaking.
- Be polite and respectful to the other pair. Do not use insults.
- Keep strictly to time limits. (Kitchen timers were used by each foursome.)
- You are all, all four of you, working together to learn about this issue and decide what you all agree is the best way to educate children whose native language is not English.
- When your foursome is trying to reach a consensus, you should be willing to compromise without giving up your principles.
- After the debate, you will write a short composition expressing your opinion. You can express an opinion different from the one you defended at the beginning of the debate.
- 10 points extra credit will be awarded to each group member if all the compositions in their group have scores above 80, with 100 being the top score.

3) 15 minutes. Pairs meet to prepare to present their position.

4) 5 minutes. ProBE side presents their position.

5) 5 minutes. ProESL side presents their position.

6) 10 minutes. Discussion with each side defending their position.

Second Day

7) 5 minutes. Pairs meet to prepare to present the opinion different from their original position. In order to create resource-driven positive interdependence, they receive no materials for their new position. This way they have to have

listened carefully and taken notes when the other pair was presenting.

8) 5 minutes. New ProESL side presents their position.

9) 5 minutes. New ProBE side presents their position.

10) 5 minutes. Discussion with each side defending their new position.

11) 18 minutes. Entire group of four tries to reach a consensus on the issue.

12) 2 minutes. Processing group interaction, i.e., the group discusses the good aspects of how they worked together and suggests ways that they could improve.

13) 10 minutes. Group members begin to write individual reports explaining and supporting the consensus or explaining and supporting their own opinion if there is no consensus.

14) The 2-3 page report is due the following class period.

Procedure for the Debate Condition

The procedure for the debate condition was the same for step 1, but differed thereafter.

First Day

2) 5 minutes. Instructions are given on how to debate.

The instructions were:

- You are trying to win the debate.
- Make your points clearly and concisely.
- Present evidence to support your arguments.
- Take notes while your opponents are speaking so that you can effectively rebut their arguments.

- Be polite and respectful to your opponents. Do not use insults.
- Try to disprove your opponents' arguments by finding holes, contradictions, or inconsistencies in your opponents' presentations.
- Keep strictly to time limits.
- Everyone will vote by secret ballot at the end of the debate on which side presented their position most effectively.
- After the debate, you will write a short composition expressing your opinion on the issue. You can express an opinion different from the one you defended during the debate.
- 10 points extra credit will be awarded to students who score above 80 on their compositions, with 100 being the top score.

3) 15 minutes. Pairs meet to prepare to present their positions.

4) 10 minutes. ProBE side presents their position.

5) 10 minutes. ProESL presents their position.

Second Day

6) 5 minutes. Pairs meet to prepare their rebuttals.

7) 10 minutes. ProBE side rebuts.

8) 10 minutes. ProESL side rebuts.

9) 5 minutes. Pairs meet to prepare closing arguments.

10) 4 minutes. ProESL side gives closing arguments.

11) 4 minutes. ProBE side gives closing arguments.

12) 2 minutes. Discussion of how well each side debated. Secret ballot regarding which side did a better job of debating.

13) 10 minutes. Group members begin to write individual reports

explaining and supporting their own opinion on the issue.

Dependent Variables

Fourteen dependent variables were used in the study. These were opinion on the topic, interest in the topic, strength of feeling toward the topic, enjoyment of the activity, amount learned from partner, amount learned from other pair, amount other pair and amount partner learned from subject, perceived usefulness of the activity for elementary level classes and for secondary level classes, amount issue was discussed outside of class, overall quality of composition, balance of arguments from both sides in composition, and total number of arguments in composition. Each one of these dependent variables is discussed below.

Perceived learning within the 4-person groups was the focus of four variables. These measured how much a person believed they: learned from the other pair, learned from their partner, helped the other pair learn, and helped their partner learn. One 7-point Likert scale, administered after the treatment, was used for each variable. Enjoyment of the activity was also measured with a single 7-point Likert scale given after the treatment.

As participants in the study were either preservice teachers or people with teaching experience who were gaining further training, an attempt was made to determine to what extent they perceived their condition to be useful with students at the elementary and at the secondary level. One 7-point scale, administered after the treatment, was used for each level.

Amount of curiosity generated by the two conditions was measured by a 7-point Likert scale which asked participants to report the amount that they had discussed the topic outside of class.

Opinion, interest, and strength of feeling toward the topic were all measured pre- and post-treatment. One 7-point Likert scale each was used to measure interest and feeling. Also, participants were asked to circle either a statement supporting BE for students of limited English proficiency or a statement supporting ESL classes for such students.

To find a topic for the debate, participants completed a questionnaire stating their opinion on, interest in, and strength of feeling toward seven topics which the researchers felt were relevant to the multicultural education course and potentially interesting and controversial for students. From the results of this survey-pretest, the issue of BE vs. ESL instruction for non-native speakers of English was chosen because it had the most even division of opinion with relatively high amounts of interest and feeling. Pre-treatment opinions and levels of interest and feeling were compared with results from identical post-treatment measures.

Students' compositions were scored from 1-20 for overall quality. This was conceived as understanding of the topic, coherence of presentation of one's position, and support for that position. Two raters were used. Both were experienced English teachers. After reading several compositions together and discussing scoring criteria, they read and scored the same eight papers separately. Interrater agreement was calculated from these scores and an interrater reliability of $r=.82$ was obtained. Afterwards, each rater scored half of the remaining compositions.

The compositions were also scored for the number of explicit rationales stated in support of one of the two sides or in support of an alternative arrangement. Thus, each composition had a score for number of proBE rationales, the number of proESL rationales, the number of rationales given in support of alternative arrangements, and the total number of rationales stated. Only plausible rationales were counted, and one reason was placed in only one category. Interrater agreement was calculated in the same way as for the overall composition scores. The correlations between the two raters' scores were: Total $r=.92$, ProBE $r=.93$, ProESL $r=.95$, Other $r=.86$. Afterwards, one of the raters scored the remaining compositions.

Researchers

One professor and two graduate students were the researchers in the study. The professor was the instructor of the class.

Both the professor and one of the graduate students (the two authors of this report) had several years of teaching experience including some use of cooperative learning. While both used groups frequently, these groups were not usually structured according to the fairly strict criteria of cooperative learning as defined by Johnson, Johnson, and Holubec (1986). Also, neither had experience using the cooperative controversy procedure or the precise debate procedure employed in this study. However, both of them had read extensively on cooperative learning, in addition to publishing and presenting on the topic. The other graduate student had experience with cooperative learning in working with the professor.

Before each class, the research team discussed the day's procedure. During implementation, at least one researcher monitored the interaction among groups in each condition. Students in the two conditions met in separate classrooms, and the researchers rotated daily. Students were told that they were assigned to different rooms so that they could spread out and debate with less interference from the discussion of other groups. They were not told they were participating in different conditions until the debriefing session, after the posttest was administered.

Results

A multivariate analysis of variance was performed comparing the two treatment conditions on each of the fourteen dependent variables.

Three comparisons were significant at the .05 level. Students in the debate condition indicated that they discussed the issue significantly more outside of class. This may have been due to the competitive atmosphere generated by the debate.

Students in the cooperative controversy condition believed that the other pair had learned more from them than did students in the debate condition. Also, students in the cooperative controversy condition had more balanced presentations of reasons for supporting the two positions. In other words, they were more likely to include arguments for both sides in their written

discussion of the issue.

The two comparisons which were significant at between .05 and .10 both favored the cooperative controversy groups. These two variables were enjoyment of the activity and amount learned from the opposite pair.

One comparison approached significance (p=.108). Here, the cooperative controversy condition was more likely to view their condition as suitable for use in elementary schools. Perhaps the fact that no significant difference was found for ratings of usefulness at the secondary level indicates that students felt that the debate condition was too harsh for use with younger students. No other comparisons were significant.

Discussion of the Methodology

Limitations

Several biases and limitations weaken the confidence that can be placed in the study's findings. This study took place within the context of an existing curriculum and was not pure experimental research. As such, a balance was sought between meeting instructional obligations to students and collecting data for research purposes rather than direct instructional purposes. One weakness which became clear early in the study was the many participants did not understand the difference between BE and ESL. For example, some thought that BE meant that all students, including native speakers of English, would study a second language. Thus, initial measures of opinion, interest, and feeling may have been based on inaccurate conceptions of the issue. Further, although an attempt was made, after the research was underway, to clarify what BE and ESL were, several of the compositions reveal that this clarification was not always successful.

Another weakness of the study was that not enough time was spent to acquaint participants with the procedures to be followed. While they were given handouts with the instructions for their conditions, only a fast five minutes was devoted to discussing them, and students had no practice in the procedures.

Informal observation suggests that students did a fair amount of bending of the procedural guidelines. As easily happens in classroom research conducted by the instructor of the class with only limited support staff, systematic observation of whether the two conditions were carried out as they were conceived was not done. Observation of compliance of students to their respective conditions was limited to "trouble-shooting" walks from group to group during class sessions.

The duration of the study is a further weakness. One week with two 50 minute class periods is not much time to experience a condition. A final weakness was the relatively small sample size of 34.

Possible Strengths and Suggestions for Other Research Questions

One aspect of the study which differed from studies investigating the use of cooperative controversy versus other instructional procedures (see Johnson & Johnson, 1987 for a review) was that participants were assigned to initial positions on the issue, as nearly as possible, by what their real opinion was. Clearly this will not always be possible where teachers have a set curriculum and use instructional procedures involving controversy to teach it. Often, it will be difficult to find an issue which fits the curriculum on which students are split nearly 50-50. However, the benefit is that there may be more investment in the discussion, especially before changing positions in the cooperative controversy condition and throughout the debate condition.

The randomization of subjects was another strength of the study. Randomizing on ethnicity was especially important because Caucasians, who made up 26% of the class, often tend to be more assertive in classroom settings than do other ethnic groups.

The use of two dependent measures specific to teacher training courses, i.e., perceived usefulness of the condition for primary and secondary level classes, was a unique aspect of this study. It gave a small piece of information on whether students might use the technique when they teach. Perhaps other measures could be designed to fit the unique characteristics of College of

Education students.

Another way of operationalizing controversy would have been to use a tripartite, rather than a bipartite, set of positions on an issue. This might have a couple advantages. First, reality is many-sided, rather than merely either/or. Second, introducing a third side, or even a fourth, encourages students to see this many-sided reality. However, Johnson and Johnson (1987, chapter 4, p. 3) argue against this, in part, because they believe that synthesizing three positions may be too complex for students.

At first, it might seem that any third position on an issue would only be a compromise between two poles. This may be true in some cases, but in others there seems to be a third dimension. For example, on the issue of what to do about cocaine consumption in the U.S., one could argue that the solution lies in legalization of cocaine or harsher penalties for users in the U.S. or education about the dangers of cocaine combined with rehabilitation and jobs programs, to name a few options. In the BE/ESL debate, a third option would be immediate submersion in regular classes or after-school peer-tutoring, although then the ESL position emerges as something of a middle ground. Another example of multiple dimensions is learning theories, e.g., behaviorist vs. humanistic vs. cognitive.

The introduction of a fourth perspective would be a way to avoid having a third position seem like a compromise. For example, on the abortion issue, if you had three positions - "always up to the pregnant woman", "allowable under limited circumstances", and "never acceptable" - the middle ground could be split into two positions, one toward each end of the continuum.

How could the cooperative controversy model be adopted to triarchic controversy? Perhaps 6-person groups of three pairs each would be too cumbersome, as Johnson and Johnson (1987) suggest. Instead, 3-person groups could be used, and each member would prepare to present their position in expert teams composed of students with the same position, similar to the jigsaw model. It might prove boring to have students rotate to argue for each of the three positions. If so, positions could be rotated only

once.

Another way of researching the cooperative controversy model would be to look at its parts to see which contribute most to learning and affective variables. There are at least five separate parts: 1) preparation with partner; 2) first discussion in group; 3) preparation with new position; 4) second discussion; and 5) attempt at reaching consensus. A number of studies have found particular types of language to be more effective in aiding learning, e.g., giving and receiving explanations (Webb, 1982; Dansereau, 1985, 1987; Ilola, 1989). Audio recording could be used to capture the discourse in the five parts. The parts could then be compared. Of particular interest might be the consensus portion. Roger Johnson, (personal communication) reports that his experience indicates that this is the most productive portion of the procedure because it is then that students are most engaged.

Another research issue would be to look at the effect of the teaching of collaborative skills on the behavior of students in cooperative controversy groups and on their performance on various cognitive and affective measures. To my knowledge, there is little research on this variable, although it is a key element in the Johnson and Johnson model.

Conclusions

While far from conclusive, the results of this study, in concert with those of previous research findings, support the use of structured disagreement in the classroom. "Invitational education" doesn't mean cognitive and interactional passivity. Saying "I disagree" should be heard in the Inviting School. As students learn to assert their ideas, disagree in an agreeable fashion, and participate in lively interaction about controversial issues, disagreement can be a challenge to consider alternative perspectives and becomes, therefore, an invitation to greater learning.

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